



#4

SEQUENCE LISTING

<110> Haygood, M.
Davidson, S.K.
Allen, S.W.
Hildebrand, M.

<120> Bryostatins, Bryopyrans and Polyketides: Compositions and Methods

<130> 1133.010US1

<140> US 09/775,938
<141> 2001-01-31

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<151> 2000-08-04

<150> US 60/147,283
<151> 1999-08-04

<160> 38

<170> FastSEQ for Windows Version 4.0

<210> 1
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<212> DNA
<213> Endobugula sertula

<220>
<221> misc_feature
<222> (1)...(17)
<223> N in this sequence refers to I or inosine.

<400> 1
acrtgngcrt tngtncc 17

<210> 2
<211> 15
<212> DNA
<213> Endobugula sertula

<220>
<221> misc_feature
<222> (1)...(15)
<223> N in this sequence refers to I or inosine.

<400> 2
ncayggnacn ggnac 15

<210> 3
<211> 18
<212> DNA
<213> Endobugula sertula

<400> 3
acggacaagc gtcattac 18

<210> 4
 <211> 18
 <212> DNA
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 <400> 4
 acggacaagc gtcattac 18

 <210> 5
 <211> 29
 <212> DNA
 <213> Endobugula sertula

 <400> 5
 gttgtctttg cagcatcgca tgttaccac 29

 <210> 6
 <211> 25
 <212> DNA
 <213> Endobugula sertula

 <400> 6
 cacgcccgt atcccagcac ctacc 25

 <210> 7
 <211> 22
 <212> DNA
 <213> Endobugula sertula

 <400> 7
 tgctatttga tgagcccgcg tt 22

 <210> 8
 <211> 19
 <212> DNA
 <213> Endobugula sertula

 <400> 8
 catcgctgct tcgcaaccc 19

 <210> 9
 <211> 315
 <212> DNA
 <213> Endobugula sertula

 <400> 9
 aaattgggtg atccgataga agtcgagaca ttggcagaat cgtttcgagt ctatacggac 60
 aagcgtcatt actgtgctct ggggtcggta aaaagtaata ttggtcattt gggggtaggt 120
 gctgggatag cgggcgtgac caaagtattg ttgtctttgc agcatcgcat gttaccaccg 180
 acgattcatt gtgaggatgt aaaccacag attgcgttgg aaggtagccc cttttatatac 240
 aatacggaat taaagccttg gcagtcctgg gacggtatac cacgacgggc tgggtgcagt 300
 tcttttggtg tcagt 315

 <210> 10
 <211> 105
 <212> PRT
 <213> Endobugula sertula

<400> 10
 Lys Leu Gly Asp Pro Ile Glu Val Glu Thr Leu Ala Glu Ser Phe Arg
 1 5 10 15
 Val Tyr Thr Asp Lys Arg His Tyr Cys Ala Leu Gly Ser Val Lys Ser
 20 25 30
 Asn Ile Gly His Leu Gly Val Gly Ala Gly Ile Ala Gly Val Thr Lys
 35 40 45
 Val Leu Leu Ser Leu Gln His Arg Met Leu Pro Pro Thr Ile His Cys
 50 55 60
 Glu Asp Val Asn Pro Gln Ile Ala Leu Glu Gly Ser Pro Phe Tyr Ile
 65 70 75 80
 Asn Thr Glu Leu Lys Pro Trp Gln Ser Gly Asp Gly Ile Pro Arg Arg
 85 90 95
 Ala Gly Val Ser Ser Phe Gly Val Ser
 100 105

<210> 11
 <211> 736
 <212> DNA
 <213> Endobugula sertula

<400> 11
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 aagcgtcatt actgtgctct ggggtcggta aaaagtaata ttggtcattt gggggtagggt 120
 gctgggatag cgggcgtgac caaagtattg ttgtctttgc agcatcgcat gttaccaccg 180
 acgattcatt gtgaggatgt aaaccacag attgcgttg aaggtagccc cttttatatc 240
 aatacgggaat taaagccttg gcagtcctgg gacggtatac cacgacgggc tgggtgtcagt 300
 tcttttgggtg tcagtggtac caatgcacat cttgtattag aagaatatac tcaccgagta 360
 acatcaccat taaaaaatac ttttttacct cagaacgggt tgtttattgt tccactatct 420
 gcaaaaaatg atgaatgctt aaatgcttgt gtgcaacgac tggtattttt tctaaaaagc 480
 aggcaatccg atacatataa aaaatattcc ttaagtata cagctcctat attgtagat 540
 ttagcatata ccctccaggc cagtagggaa gcgatgacaa aacgagttgc cttttagtg 600
 aaaacaacaa tagagttaat ggaaaaatta aatgcattta tagaaaaaca aaatactata 660
 aaagcaagta atataaaagg ttgttactac tcttcgacta aaacatcgag tccatttgat 720
 aatgaatcga ctgac 736

<210> 12
 <211> 245
 <212> PRT
 <213> Endobugula sertula

<400> 12
 Lys Leu Gly Asp Pro Ile Glu Val Glu Thr Leu Ala Glu Ser Phe Arg
 1 5 10 15
 Val Tyr Thr Asp Lys Arg His Tyr Cys Ala Leu Gly Ser Val Lys Ser
 20 25 30
 Asn Ile Gly His Leu Gly Val Gly Ala Gly Ile Ala Gly Val Thr Lys
 35 40 45
 Val Leu Leu Ser Leu Gln His Arg Met Leu Pro Pro Thr Ile His Cys
 50 55 60
 Glu Asp Val Asn Pro Gln Ile Ala Leu Glu Gly Ser Pro Phe Tyr Ile
 65 70 75 80
 Asn Thr Glu Leu Lys Pro Trp Gln Ser Gly Asp Gly Ile Pro Arg Arg
 85 90 95
 Ala Gly Val Ser Ser Phe Gly Val Ser Gly Thr Asn Ala His Leu Val
 100 105 110
 Leu Glu Glu Tyr Thr His Arg Val Thr Ser Pro Leu Gln Asn Thr Ile
 115 120 125

Leu Pro Gln Asn Gly Leu Phe Ile Val Pro Leu Ser Ala Lys Asn Asp
 130 135 140
 Glu Cys Leu Asn Ala Cys Val Glu Arg Leu Leu Phe Phe Leu Lys Ser
 145 150 155 160
 Arg Gln Ser Asp Thr Tyr Lys Lys Tyr Ser Leu Ser Asp Thr Ala Pro
 165 170 175
 Ile Leu Leu Asp Leu Ala Tyr Thr Leu Gln Val Ser Arg Glu Ala Met
 180 185 190
 Thr Lys Arg Val Ala Phe Val Val Lys Thr Thr Ile Glu Leu Met Glu
 195 200 205
 Lys Leu Asn Ala Phe Ile Glu Lys Gln Asn Thr Ile Lys Ala Ser Asn
 210 215 220
 Ile Lys Gly Cys Tyr Tyr Ser Ser Thr Lys Thr Ser Ser Pro Phe Asp
 225 230 235 240
 Asn Glu Ser Thr Asp
 245

<210> 13
 <211> 312
 <212> DNA
 <213> Endobugula sertula

<400> 13
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 cgaaaacagt tttgcggtat cggttcagta aaatcaaata ttggatcatct ggatgttgct 120
 gctggagtcg ttggtctgat caagacagca ttgtcgtctgc agcacggttt gttgcctccc 180
 acgatcaact acgaagcacc caatcgggaa atcaattttg aacaatcacc ctttcatgtg 240
 attgatgaac tcacggagtg gcgggggtcaa ggtggaccac ttcgtgctgg tgtcagctcg 300
 tttggaattg gt 312

<210> 14
 <211> 104
 <212> PRT
 <213> Endobugula sertula

<400> 14
 Arg Leu Gly Asp Pro Ile Glu Leu Ala Ala Leu Ser Lys Ala Phe Glu
 1 5 10 15
 Glu Gly Thr Gln Arg Lys Gln Phe Cys Gly Ile Gly Ser Val Lys Ser
 20 25 30
 Asn Ile Gly His Leu Asp Val Ala Ala Gly Val Val Gly Leu Ile Lys
 35 40 45
 Thr Ala Leu Ser Leu Gln His Arg Leu Leu Pro Pro Thr Ile Asn Tyr
 50 55 60
 Glu Ala Pro Asn Arg Glu Ile Asn Phe Glu Gln Ser Pro Phe His Val
 65 70 75 80
 Ile Asp Glu Leu Thr Glu Trp Arg Gly Gln Gly Gly Pro Leu Arg Ala
 85 90 95
 Gly Val Ser Ser Phe Gly Ile Gly
 100

<210> 15
 <211> 324
 <212> DNA
 <213> Endobugula sertula

<400> 15
 caattgggcg accctattga actgcaagca ctggccgatg tgtatagagt tgataactgg 60

cgcaaaaaca cctgtgccct cggctcggta aaaagcaata ttggccatac ctctgcggcc	120
tctggtgtgg ctggtatata caaggtgctg ttatcgctta agcatcgaca attagtagcg	180
agcctgcatt ttaatagcgc caatcaccac tttgatatttc aacagtcgcc tttttatgtc	240
aatacccgagc taaggccctg ggatcaagca gagggactag aagaaagccg ccgccgggct	300
gcggtcagtt cttttggtgt cagt	324

<210> 16
 <211> 108
 <212> PRT
 <213> Endobugula sertula

<400> 16

Gln	Leu	Gly	Asp	Pro	Ile	Glu	Leu	Gln	Ala	Leu	Ala	Asp	Val	Tyr	Arg
1				5					10					15	
Val	Asp	Asn	Trp	Arg	Lys	Asn	Thr	Cys	Ala	Leu	Gly	Ser	Val	Lys	Ser
		20						25					30		
Asn	Ile	Gly	His	Thr	Ser	Ala	Ala	Ser	Gly	Val	Ala	Gly	Ile	His	Lys
		35					40					45			
Val	Leu	Leu	Ser	Leu	Lys	His	Arg	Gln	Leu	Val	Ala	Ser	Leu	His	Phe
	50					55					60				
Asn	Ser	Ala	Asn	His	His	Phe	Asp	Phe	Gln	Gln	Ser	Pro	Phe	Tyr	Val
65					70				75					80	
Asn	Thr	Gln	Leu	Arg	Pro	Trp	Asp	Gln	Ala	Glu	Gly	Leu	Glu	Glu	Ser
				85				90					95		
Arg	Arg	Arg	Ala	Ala	Val	Ser	Ser	Phe	Gly	Val	Ser				
			100					105							

<210> 17
 <211> 308
 <212> DNA
 <213> Endobugula sertula

<400> 17

gagtatggag atccaatgga attgacggct gcagctgccg tctttggacg aggacgaaat	60
cagaaaaatc gtttgctggt cggatcagta aaagccaata ttagtcacct ggaagcagcc	120
gggggtatatt ctggactgat caaagcagta ctggcaatgc agcatggcgt gattccacag	180
caattacact gcaaagaacc gagtcctcat atcccctgga aacgtctgcc tctcgatttg	240
gtacaagagc agactgtctg gccggaaagt gaagagcgga tcgcggctgt aacagcgctc	300
gattagcg	308

<210> 18
 <211> 101
 <212> PRT
 <213> Endobugula sertula

<400> 18

Glu	Tyr	Gly	Asp	Pro	Met	Glu	Leu	Thr	Ala	Ala	Ala	Ala	Val	Phe	Gly
1				5					10					15	
Arg	Gly	Arg	Asn	Gln	Lys	Asn	Arg	Leu	Leu	Val	Gly	Ser	Val	Lys	Ala
			20					25					30		
Asn	Ile	Ser	His	Leu	Glu	Ala	Ala	Gly	Gly	Ile	Ser	Gly	Leu	Ile	Lys
			35				40					45			
Ala	Val	Leu	Ala	Met	Gln	His	Gly	Val	Ile	Pro	Gln	Gln	Leu	His	Cys
	50					55					60				
Lys	Glu	Pro	Ser	Pro	His	Ile	Pro	Trp	Lys	Arg	Leu	Pro	Leu	Asp	Leu
65					70				75					80	
Val	Gln	Glu	Gln	Thr	Val	Trp	Pro	Glu	Ser	Glu	Glu	Arg	Ile	Ala	Ala
				85				90					95		

Val Thr Ala Ser Asp
100

<210> 19
<211> 300
<212> DNA
<213> Endobugula sertula

<400> 19
caacttggcg atgaaataga agttcgcgct ctgagtaaag tgtacggaga ttcacagtcc 60
acgacatacc ttggtgctgt aaaaagcaac atagggtcatg ccaacgcagg agcgggcatt 120
gctgggtttta ttaaaacggg gctgtctctt taccatggca aaattgcacc caatgcaggc 180
aataccgagc ccaatgcagc tttgaacctt gacgcgtttc attttgcatt accaaaaact 240
ttgcttacat ggccggagtg tgatgttcga cgggcagcga tcagctcact ggggttttgg 300

<210> 20
<211> 100
<212> PRT
<213> Endobugula sertula

<400> 20
Gln Leu Gly Asp Glu Ile Glu Val Arg Ala Leu Ser Lys Val Tyr Gly
1 5 10 15
Asp Ser Gln Ser Thr Thr Tyr Leu Gly Ala Val Lys Ser Asn Ile Gly
20 25 30
His Ala Asn Ala Gly Ala Gly Ile Ala Gly Phe Ile Lys Thr Val Leu
35 40 45
Ser Leu Tyr His Gly Lys Ile Ala Pro Asn Ala Gly Asn Thr Glu Pro
50 55 60
Asn Ala Ala Leu Asn Leu Asp Ala Phe His Phe Ala Leu Pro Lys Thr
65 70 75 80
Leu Leu Thr Trp Pro Glu Cys Asp Val Arg Arg Ala Ala Ile Ser Ser
85 90 95
Leu Gly Phe Gly
100

<210> 21
<211> 304
<212> DNA
<213> Endobugula sertula

<400> 21
gccttgggtg atcctattga atttggcgca atcaaggctg tgtatgggac tggtcggtct 60
tctccgctgg tgctcggtgc acttaaactg aacatcgggc atttgggaagc gactgcaggc 120
gttgcagctc tgattaaggc agttttgggt cttcaacatg gcgtgggtcc ggccaatttg 180
cactgtcaca aattgaatcc gcttctggat atcgacggct tcaatgttgt gttcccgcag 240
tctgagaccc ccttgacacag ctctctgcag ctacttggcg ggtatcagtt cgttcggggt 300
tggt 304

<210> 22
<211> 101
<212> PRT
<213> Endobugula sertula

<400> 22
Ala Leu Gly Asp Pro Ile Glu Phe Gly Ala Ile Lys Ala Val Tyr Gly
1 5 10 15

Pro Gly Arg Ser Ser Pro Leu Val Leu Gly Ala Leu Lys Ser Asn Ile
20 25 30
Gly His Leu Glu Ala Thr Ala Gly Val Ala Ala Leu Ile Lys Ala Val
35 40 45
Leu Val Leu Gln His Gly Val Ala Pro Ala Asn Leu His Cys His Lys
50 55 60
Leu Asn Pro Leu Leu Asp Ile Asp Gly Phe Asn Val Val Phe Pro Gln
65 70 75 80
Ser Glu Thr Pro Leu His Ser Ser Leu Gln Leu Leu Gly Gly Tyr Gln
85 90 95
Phe Val Arg Val Trp
100

<210> 23
<211> 314
<212> DNA
<213> Endobugula sertula

<400> 23
acttggtgat ccctattgag gtgggggctc ttacagaatc atttcgatcc ctatacagaa 60
aaaaagaact actgtgcctc gggatcggtg aaaagcaata tcgggcatct tttaaccgcg 120
gccggagtat ctggagtagt caaagtgtta ctcgctttga aacataagca acttccacct 180
tcctgtcatc tggtgaaaat caatgagcat atcaaccttg aggacagtcc attttatatc 240
aatacggcat taaagaaatg ggaagtatcg gaaggtgagg ctcgcagggc cgcagtcagc 300
tcgtttggtt cagc 314

<210> 24
<211> 103
<212> PRT
<213> Endobugula sertula

<220>
<221> SITE
<222> (1)...(103)
<223> Xaa = Any Amino Acid

<400> 24
Thr Trp Xaa Ser Leu Leu Arg Trp Gly Leu Leu Gln Asn His Phe Asp
1 5 10 15
Pro Tyr Thr Glu Lys Lys Asn Tyr Cys Ala Ser Gly Ser Val Lys Ser
20 25 30
Asn Ile Gly His Leu Thr Ala Ala Gly Val Ser Gly Val Val Lys Val
35 40 45
Leu Leu Ala Leu Lys His Lys Gln Leu Pro Pro Ser Cys His Leu Val
50 55 60
Lys Ile Asn Glu His Ile Asn Leu Glu Asp Ser Pro Phe Tyr Ile Asn
65 70 75 80
Thr Ala Leu Lys Lys Trp Glu Val Ser Glu Gly Glu Ala Arg Arg Ala
85 90 95
Ala Val Ser Ser Phe Gly Ser
100

<210> 25
<211> 306
<212> DNA
<213> Endobugula sertula

<400> 25
ccactcggcg acccaatcga gatggcagca ttaaaacagg cttttgggac tcaaaagaaa 60
aaatactgtg cgataggggtc ggtgaagagc aacattggtc atgccgatac ggcggtctggc 120
gtcgtctggtc tcatcaagac ggtgatggca ctcaaggcgc gtcagatacc gcctagcttg 180
cactttgaga cccccaatcc gcagatcgat tttgccgaca gtccctttta tgtaaataca 240
accttgaaag attggaacac caacggtgtt ccgcgcgcgcg cgggcgtgag ttcgtttggc 300
atcgggt 306

<210> 26
<211> 102
<212> PRT
<213> Endobugula sertula

<400> 26
Pro Leu Gly Asp Pro Ile Glu Met Ala Ala Leu Lys Gln Ala Phe Gly
1 5 10 15
Thr Gln Lys Lys Tyr Cys Ala Ile Gly Ser Val Lys Ser Asn Ile
20 25 30
Gly His Ala Asp Thr Ala Ala Gly Val Ala Gly Leu Ile Lys Thr Val
35 40 45
Met Ala Leu Lys Ala Arg Gln Ile Pro Pro Ser Leu His Phe Glu Thr
50 55 60
Pro Asn Pro Gln Ile Asp Phe Ala Asp Ser Pro Phe Tyr Val Asn Thr
65 70 75 80
Thr Leu Lys Asp Trp Asn Thr Asn Gly Val Pro Arg Arg Ala Gly Val
85 90 95
Ser Ser Phe Gly Ile Gly
100

<210> 27
<211> 309
<212> DNA
<213> Endobugula sertula

<400> 27
gtggtcggag atccgattga ggtcgtggga ctgacgaaag cctatcaagc gcacactcag 60
gaacgtcaat actgcggact gggttcgggtg aagacgaata ttggccatac ggactcggct 120
gctggcattg ctggacttct caagatcgtc atggcgatga agcatcgtea actgccgccg 180
agcttgaatt ttgaaacacc aaatccagac ctggatctgg agaatagtcc gttcttcatc 240
cagacgaagc tgaaggattg ggaaagtgtg gggcctcgtc gtgccgcggt gagttcgttt 300
ggtttgggt 309

<210> 28
<211> 103
<212> PRT
<213> Endobugula sertula

<400> 28
Val Val Gly Asp Pro Ile Glu Val Val Gly Leu Thr Lys Ala Tyr Gln
1 5 10 15
Ala His Thr Gln Glu Arg Gln Tyr Cys Gly Leu Gly Ser Val Lys Thr
20 25 30
Asn Ile Gly His Thr Asp Ser Ala Ala Gly Ile Ala Gly Leu Leu Lys
35 40 45
Ile Val Met Ala Met Lys His Arg Gln Leu Pro Pro Ser Leu Asn Phe
50 55 60
Glu Thr Pro Asn Pro Asp Leu Asp Leu Glu Asn Ser Pro Phe Phe Ile
65 70 75 80

Gln Thr Lys Leu Lys Asp Trp Glu Ser Val Gly Pro Arg Arg Ala Ala
85 90 95
Leu Ser Ser Phe Gly Leu Gly
100

<210> 29
<211> 6000
<212> DNA
<213> Endobugula sertula

<220>
<221> misc_feature
<222> (386)...(388)
<223> TAG may represent a transposase open reading frame.

<221> misc_feature
<222> (444)...(449)
<223> TTGAAA may be a possible -35 trascription control sequence.

<221> misc_feature
<222> (458)...(463)
<223> GATAAT may be a possible -10 trascription control sequence.

<221> misc_feature
<222> (474)...(502)
<223> ATCAATAAAAA and TTTTATTGAT are inverted repeats.

<221> misc_feature
<222> (576)...(583)
<223> TGAGGAAT may be a possible SD sequence.

<221> misc_feature
<222> (565)...(567)
<223> ATG encoding M is presumptive start of PKS Open reading frame.

<221> misc_feature
<222> (589)...(591)
<223> GTG encoding V is is possible alternative start of PKS Open reading frame.

<400> 29
gatggaactc attaccaccc acaaaaaagt ccgtttcttc aacgcggttg atttaattaa 60
ccagctaatac aacgaacaac aaaagcagca aacgggcaaa ctcacagag ccttattgca 120
ggtggattgt ttaagtattg atgaactcgg ttatatccca ttccctaaat ccggtggggc 180
gttgctcttc cacctcatca gtaaacggta tgagaagacc agtattatca tcagcaccaa 240
tctggctttt ggggaatgga acagtgtgtt tggatgatgcc aagatgacca ccgcgttatt 300
ggatcgtatc acgcatcatt gttcaatcat cgaaaccaag catgcgtcgt atcgttttaa 360
gcagagtcag aaacagacat gaaagtagct ttcaccggtg ggacagtgtt agatgcaaac 420
cccgggtcag cttaaagtgc aatttgaaaa ccaatgtgat aattgtggct aagatcaata 480
aaaataaaat ttttttattg attatgatga tccacgttaa aaaaaatact ataaatatga 540
aataatattt caactttatt tttgatggtc gttggtgagg aattttttgt gagttatcga 600
gatattttga aggctttaca ggatgaaaaa attagttttg aagaggctaa atataagtta 660
ataaaaagaa aagataaaaa atcaaaacag cgtttaaatc atgatcgtga attaaatcga 720
tcgatgaata ttacgcaaaa aatagtgaat aattacggtt tagtattatt gggcggtcat 780

ttatttgaag	aactccgtct	gagtgaatgg	aaagctgcc	accctaacc	taatgaagtt	840
agcattcagg	tcaaggcatc	cgccattagt	tttaccgata	ccttggtgtg	acaagggttta	900
tatccatcac	actatccctt	tgttccgggc	tttgaagtat	cgaggagtgt	tcgtcaagtg	960
gggtgaacaca	taaccgactt	acacgtgggt	gatgaagtta	ttgcgttcac	aggatcatca	1020
atgggagggc	atgctgccta	tgtgacggtg	ccacaagatt	acgtggtacg	aaaacccaag	1080
gacttatctt	ttgaggatgc	ctgtagcttc	ccattggctt	ttgcgaccgt	ctatcacagt	1140
tttgacggg	gaaaattatc	tcacaacgat	catatcttga	tacaaacggc	gacaggtggc	1200
tgtggtttga	tggcacttca	gttggcgctg	ttaaagcagt	gtgtgtgtta	tgggacctcc	1260
agccgagaag	acaagcttgc	actcctcaaa	cagtgggcac	tgccctacgt	cttcaattat	1320
aagacgtgca	atattgatga	ggagattcaa	cgcgctcagt	gtcatcgagg	tgtcgatgtc	1380
gtcttaaata	tgtccccagg	agagcatata	caacaagggc	tgaatagttt	agccaaggga	1440
ggccggttatt	tggaaactgtc	gatgcatgga	ttgttaacga	acgaacctgt	cagtctgtcg	1500
tctctgcgtt	ttaatcaatc	cgttcaaacc	atcaatttac	tggggttact	caataagggt	1560
gatgatggct	ttatcgggtc	tgtattagcg	caaatggttt	cctggattga	atcaggtgat	1620
ttagtgtcaa	ccgtgtcgcg	tatttatccg	ttggatcaga	tcggtgaagc	gttacgttat	1680
gtctctgaag	gggagcatat	aggtaaagtc	gttgtgagtc	atacagcgac	agagccgatg	1740
gattgcagac	agcgctgtat	tgacaatgta	ttgaagcaag	ggcaaatggc	ggccttgacc	1800
gcgacagggg	gaaaaagccg	ggtgtggggt	ggtactgggt	tcaatgacaa	accgtctcct	1860
gctgttggtg	tagaggagcg	tttattggaa	gggtagcggt	tgattggtct	gtcaggccag	1920
tatccgaagt	cgaagacact	ggagcaatct	tggcagaccc	tagcggatgg	agtggattgc	1980
atctcagaga	ttcctgctga	tcgctgggtc	ttagaagagt	attactcgcc	aataccggaa	2040
gggggtaaaa	cgtattgtaa	gtggatgggt	gttttgagg	acatggattg	ttttgatccg	2100
ttgttttttg	cgatatctcc	tcgggaagcg	gaagtgatgg	acccacagca	acggttattt	2160
ttagagaatg	catggagttg	tatagaggat	gcggggatta	accctaagat	gttatcccg	2220
agtcgatgtg	gggtattttg	tgggtgcggt	gcgaatgatt	acagcgctct	aatgaacagt	2280
agccactcaa	cgagtctcga	attaatgaag	gaattaggca	acaactcttc	cattttatct	2340
gcacgaatct	cctacttttt	aaatttaaag	ggcccttgct	ttgcgattga	taccgcatgt	2400
tcttcttcat	tagtggccat	tgccgagtcg	tgtaatagtc	tgggtgttggg	tactagtgtg	2460
ttggcgttgg	caggtggagt	gttgctgatg	ccagggtccat	ccttacatat	aggtttgagt	2520
catggagaaa	tgttatcagt	agatgggtgc	tgctttacct	ttgaccaacg	ggccaacggt	2580
tttgtagctg	gagaggggtg	cggcggttgc	ttgttaaaac	gcatgtcgga	tgcggtgcgt	2640
gatgggtgatc	ccattcgtgc	agtgatacgg	ggctgggggtg	tgaatcagga	tggtagaagt	2700
aatggtatta	cggcgcgcag	ttcaaaagcg	caaagtgtct	tggagcaaga	ggtttatcaa	2760
cgtttttaata	ttgatccatc	gagcattacc	ttagtccaag	cacacggaac	gggcacacaa	2820
ttgggtgatc	cgatagaagt	cgaggcattg	gcagaatcgt	ttcgagtcta	tacggacaag	2880
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<213> Endobugula sertula

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<210> 32

<211> 4744

<212> DNA

<213> Endobugula sertula

<220>

<221> misc_feature

<222> (1)...(4744)

<223> N refers to any nucleotide.

<400> 32

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cagcggacga	aagaaataaa	atatctagtg	attttataga	gctttttaat	ttctctatga	480
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ccttattact	agaactgaag	gaaaatgggt	attttgatgc	gttaaaaaat	gkwaatagtc	660
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scmdhggat	rtgbdwdcac	datttvtaba	thactbgttt	atcaatdtaw	trcccaaaat	2040
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<210> 33

<211> 1954

<212> DNA

<213> Endobugula sertula

<220>

<221> misc_feature

<222> (1)...(1954)

<223> N refers to any nucleotide.

<400> 33

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cagtacaaaa	aataaagatt	acgcgattct	tgaaaatcta	ataaataatg	gagttggagt	540
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aattaaaaaa	atagtgtttt	cacccgaaat	actttttaac	tctctagata	aaggtaaacg	660
atactttcca	agtagctgcc	agcaaaaaaa	cagtctatat	caaacggaag	ttgagaagtt	720
tccatataat	cttattcaag	gatttagagt	ggaaatgcca	gtcaatattg	aaattttaaa	780
taaagcattt	aatcatttgg	ttaacacata	ttcaattttc	agaacaaaag	caatgttgat	840
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yatacgaagg	attatctgca	ggaaaaagat	tttacgcaac	aactaatnag	tattttcaaaa	960
agagcaagg	aaaaaattat	ttgatatcga	taatctgcct	ttattaataaa	tttattttat	1020
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gatgcgaata	ataccacact	gacgcaattg	ctatgttg	ctgttgcaat	tttactgtat	1440
cgcctctcga	ggctaccagt	acccttgcaa	atgggtcaaca	gccgtagaga	taaaatagaa	1500
tttgaaataa	tgatgggtga	ttttgcatca	actctgccct	atggatttta	ggaacctttc	1560
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aaggccnaan	tggaattaat	tggnaaaatt	tccantttgg	gtttttaaaa	aggggaaaaa	1860
ncccannaat	ttgggtttcc	ttaaaaanaa	aaaaaaagg	ggngggcccc	cggtggttc	1920
ntntntgggg	gnaaaaattt	aaaaatttaa	tttn			1954

<210> 34

<211> 2672

<212> DNA

<213> Endobugula sertula

<220>

<221> misc_feature

<222> (1)...(2672)

<223> N refers to any nucleotide.

<400> 34

anccgaaaaa	naccnaaagg	gnngccggcc	cntgtcctnc	gagtgcatna	taaaaaancc	60
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cacgtntaaa	aaggaaataa	atcatgggtc	ataaaattat	cacgttgctc	ggcgcgcg	240
acgaatgttc	tgtatgcgct	gtttttccgt	ggcgcggtgc	tgtctggtga	tctgccttct	300
aaatctggca	cagccgaatt	gcgcgagctt	ggttttgctg	aaaccagaca	cacagcaact	360
gaataccaga	aagaaaaatca	ctttaccctt	ctgacatcag	aagggcagaa	atttgccgtt	420
gaacacctgg	tcaatacgcg	ttttggtgag	cagcaatatt	gcgcttcgat	gacgcttgcc	480
gttgagattg	atacctctgc	tgcacaaaag	gcaatcgacg	agctgsrctm	scrmaktygk	540
gmcmccgkmw	cctwmrarrst	twttcscaaw	rragkktywt	tmawmaagsm	cscygskrky	600
gswwtggwr	ctawccacgm	arcssmwty	gaaamaccks	rkyggnktkw	csrawawmwa	660
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gccagtatta	gcaaagtatt	gctacaaatg	aaacatgggc	aaatagtgcc	gtccttgcat	1680

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acccnaangg	ggaaaaattn	tttttaaaaa	aa			2672

<210> 35

<211> 2132

<212> DNA

<213> Endobugula sertula

<220>

<221> misc_feature

<222> (1)...(2132)

<223> N refers to any nucleotide.

<400> 35

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aacctttccc	aaaaaaagg	naanttgaan	tgggggggnan	cntgggaaat	cccaagccaa	180
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ttkwtkrrwa	mwwrawcyagy	wmwscamatc	rgrtgttwt	tgrrrsssr	wmyawwtraa	300
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 <213> Endobugula sertula

<220>
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 <223> N refers to any nucleotide.

<400> 37

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aatagtacca	tcagataata	taktgcggta	gtttacgttc	yamtgaatca	kcagtkgtma	7980
wakkagtc	atagcaygms	gwrtkatasg	kgkattcata	yyrtcrawaa	syaaykckgt	8040
cgtcgagggg	yataatkctc	akrataatat	wcrttcgasw	cctgtysakk	cccwaccacr	8100
satacywssc	aaagarttgy	agtraterag	ckwtgsakws	tgamecngtgs	matnakgttc	8160
aacgcgatgk	ccagcctkat	agcatcygac	caytsagggc	caawrkmgmt	taaycccagt	8220
gtwcngttns	atrnrsagcs	mgktaatggt	mggtgwttst	wrkawgccsg	mtcttmmmaa	8280
mcmsannm	acgtacaagm	rtgwcaccmg	krkgcytrya	snmattmgct	atcamrcnca	8340
yssrrgggk	ggycttmawa	arargggcaa	aaaaaaaaan			8380

<210> 38

<211> 1812

<212> PRT

<213> Endobugula sertula

<220>

<221> PEPTIDE

<222> (1)...(1810)

<223> Corresponds to open reading frame in SEQ ID NO:29.

<400> 38

Met	Val	Val	Val	Glu	Phe	Phe	Val	Ser	Tyr	Arg	Asp	Ile	Leu	Lys
1				5				10					15	
Ala	Leu	Gln	Asp	Glu	Lys	Ile	Ser	Phe	Glu	Glu	Ala	Lys	Tyr	Lys
			20					25				30		
Ile	Lys	Arg	Lys	Asp	Lys	Lys	Ser	Lys	Gln	Arg	Leu	Asn	His	Asp
		35					40				45			
Glu	Leu	Asn	Arg	Ser	Met	Asn	Ile	Thr	Pro	Lys	Ile	Val	Asn	Asn
		50				55				60				
Gly	Leu	Val	Leu	Leu	Gly	Gly	His	Leu	Phe	Glu	Glu	Leu	Arg	Leu
65					70					75				80

Glu	Trp	Lys	Ala	Ala	Asn	Pro	Asn	Pro	Asn	Glu	Val	Ser	Ile	Gln	Val	
				85					90					95		
Lys	Ala	Ser	Ala	Ile	Ser	Phe	Thr	Asp	Thr	Leu	Cys	Val	Gln	Gly	Leu	
			100					105					110			
Tyr	Pro	Ser	His	Tyr	Pro	Phe	Val	Pro	Gly	Phe	Glu	Val	Ser	Gly	Val	
			115				120						125			
Ile	Arg	Gln	Val	Gly	Glu	His	Ile	Thr	Asp	Leu	His	Val	Gly	Asp	Glu	
			130				135					140				
Val	Ile	Ala	Phe	Thr	Gly	Ser	Ser	Met	Gly	Gly	His	Ala	Ala	Tyr	Val	
145					150					155					160	
Thr	Val	Pro	Gln	Asp	Tyr	Val	Val	Arg	Lys	Pro	Lys	Asp	Leu	Ser	Phe	
				165					170						175	
Glu	Asp	Ala	Cys	Ser	Phe	Pro	Leu	Ala	Phe	Ala	Thr	Val	Tyr	His	Ser	
			180					185						190		
Phe	Ala	Arg	Gly	Lys	Leu	Ser	His	Asn	Asp	His	Ile	Leu	Ile	Gln	Thr	
			195				200						205			
Ala	Thr	Gly	Gly	Cys	Gly	Leu	Met	Ala	Leu	Gln	Leu	Ala	Arg	Leu	Lys	
			210			215					220					
Gln	Cys	Val	Cys	Tyr	Gly	Thr	Ser	Ser	Arg	Glu	Asp	Lys	Leu	Ala	Leu	
225					230					235					240	
Leu	Lys	Gln	Trp	Ala	Leu	Pro	Tyr	Val	Phe	Asn	Tyr	Lys	Thr	Cys	Asn	
				245					250						255	
Ile	Asp	Glu	Glu	Ile	Gln	Arg	Val	Ser	Gly	His	Arg	Gly	Val	Asp	Val	
			260				265						270			
Val	Leu	Asn	Met	Leu	Pro	Gly	Glu	His	Ile	Gln	Gln	Gly	Leu	Asn	Ser	
			275			280						285				
Leu	Ala	Lys	Gly	Gly	Arg	Tyr	Leu	Glu	Leu	Ser	Met	His	Gly	Leu	Leu	
			290			295					300					
Thr	Asn	Glu	Pro	Val	Ser	Leu	Ser	Ser	Leu	Arg	Phe	Asn	Gln	Ser	Val	
305					310					315					320	
Gln	Thr	Ile	Asn	Leu	Leu	Gly	Leu	Leu	Asn	Lys	Gly	Asp	Asp	Gly	Phe	
			325						330					335		
Ile	Gly	Ser	Val	Leu	Ala	Gln	Met	Val	Ser	Trp	Ile	Glu	Ser	Gly	Asp	
			340				345						350			
Leu	Val	Ser	Thr	Val	Ser	Arg	Ile	Tyr	Pro	Leu	Asp	Gln	Ile	Gly	Glu	
			355				360					365				
Ala	Leu	Arg	Tyr	Val	Ser	Glu	Gly	Glu	His	Ile	Gly	Lys	Val	Val	Val	
			370			375					380					
Ser	His	Thr	Ala	Thr	Glu	Pro	Met	Asp	Cys	Arg	Gln	Arg	Cys	Ile	Asp	
385					390					395					400	
Asn	Val	Leu	Lys	Gln	Gly	Gln	Met	Ala	Ala	Leu	Thr	Ala	Thr	Gly	Gly	
			405					410						415		
Lys	Ser	Arg	Val	Trp	Gly	Gly	Thr	Gly	Val	Asn	Asp	Lys	Pro	Ser	Pro	
			420				425						430			
Ala	Val	Gly	Ile	Glu	Glu	Arg	Leu	Leu	Glu	Gly	Ile	Ala	Val	Ile	Gly	
			435				440					445				
Leu	Ser	Gly	Gln	Tyr	Pro	Lys	Ser	Lys	Thr	Leu	Glu	Gln	Phe	Trp	Gln	
			450			455					460					
Thr	Leu	Ala	Asp	Gly	Val	Asp	Cys	Ile	Ser	Glu	Ile	Pro	Ala	Asp	Arg	
465					470					475					480	
Trp	Ser	Leu	Glu	Glu	Tyr	Tyr	Ser	Pro	Ile	Pro	Glu	Gly	Gly	Lys	Thr	
			485					490						495		
Tyr	Cys	Lys	Trp	Met	Gly	Val	Leu	Glu	Asp	Met	Asp	Cys	Phe	Asp	Pro	
			500				505						510			
Leu	Phe	Phe	Ala	Ile	Ser	Pro	Arg	Glu	Ala	Glu	Val	Met	Asp	Pro	Gln	
			515				520					525				
Gln	Arg	Leu	Phe	Leu	Glu	Asn	Ala	Trp	Ser	Cys	Ile	Glu	Asp	Ala	Gly	
			530			535						540				

Ile	Asn	Pro	Lys	Met	Leu	Ser	Arg	Ser	Arg	Cys	Gly	Val	Phe	Val	Gly
545					550					555					560
Cys	Gly	Ala	Asn	Asp	Tyr	Ser	Ala	Leu	Met	Asn	Ser	Ser	His	Ser	Thr
				565					570					575	
Ser	Leu	Glu	Leu	Met	Lys	Glu	Leu	Gly	Asn	Asn	Ser	Ser	Ile	Leu	Ser
			580					585					590		
Ala	Arg	Ile	Ser	Tyr	Phe	Leu	Asn	Leu	Lys	Gly	Pro	Cys	Leu	Ala	Ile
	595						600					605			
Asp	Thr	Ala	Cys	Ser	Ser	Ser	Leu	Val	Ala	Ile	Ala	Glu	Ser	Cys	Asn
	610					615					620				
Ser	Leu	Val	Leu	Gly	Thr	Ser	Asp	Leu	Ala	Leu	Ala	Gly	Gly	Val	Leu
625					630					635					640
Leu	Met	Pro	Gly	Pro	Ser	Leu	His	Ile	Gly	Leu	Ser	His	Gly	Glu	Met
			645						650					655	
Leu	Ser	Val	Asp	Gly	Arg	Cys	Phe	Thr	Phe	Asp	Gln	Arg	Ala	Asn	Gly
		660						665					670		
Phe	Val	Pro	Gly	Glu	Gly	Val	Gly	Val	Val	Leu	Leu	Lys	Arg	Met	Ser
	675						680					685			
Asp	Ala	Val	Arg	Asp	Gly	Asp	Pro	Ile	Arg	Ala	Val	Ile	Arg	Gly	Trp
	690					695					700				
Gly	Val	Asn	Gln	Asp	Gly	Arg	Ser	Asn	Gly	Ile	Thr	Ala	Pro	Ser	Ser
705					710					715					720
Lys	Ala	Gln	Ser	Ala	Leu	Glu	Gln	Glu	Val	Tyr	Gln	Arg	Phe	Asn	Ile
			725						730					735	
Asp	Pro	Ser	Ser	Ile	Thr	Leu	Val	Glu	Ala	His	Gly	Thr	Gly	Thr	Lys
		740						745					750		
Leu	Gly	Asp	Pro	Ile	Glu	Val	Glu	Ala	Leu	Ala	Glu	Ser	Phe	Arg	Val
	755						760					765			
Tyr	Thr	Asp	Lys	Arg	His	Tyr	Cys	Ala	Leu	Gly	Ser	Val	Lys	Ser	Asn
	770					775					780				
Ile	Gly	His	Leu	Gly	Val	Gly	Ala	Gly	Ile	Ala	Gly	Val	Thr	Lys	Val
785					790					795					800
Leu	Leu	Ser	Leu	Gln	His	Arg	Met	Leu	Pro	Pro	Thr	Ile	His	Cys	Glu
			805						810					815	
Asp	Val	Asn	Pro	Gln	Ile	Ala	Leu	Glu	Gly	Ser	Pro	Phe	Tyr	Ile	Asn
		820						825					830		
Thr	Glu	Leu	Lys	Pro	Trp	Gln	Ser	Gly	Asp	Ser	Ile	Pro	Arg	Arg	Ala
	835						840					845			
Gly	Val	Ser	Ser	Phe	Gly	Phe	Ser	Gly	Thr	Asn	Ala	His	Leu	Val	Leu
	850					855					860				
Glu	Glu	Tyr	Leu	Pro	His	Ser	Thr	Gly	Thr	Ile	Glu	Ser	Phe	Ala	Ala
865					870					875					880
Asn	His	Ala	Ser	Thr	Val	Ile	Ile	Pro	Leu	Ser	Ala	Lys	Ser	His	Asn
			885						890					895	
Ser	Leu	Tyr	Thr	Tyr	Ala	Gln	Thr	Leu	Leu	Ile	Phe	Leu	Lys	Arg	Ser
		900						905					910		
Gln	Val	Thr	Asp	Ala	Lys	Lys	Ile	Thr	Ile	Asp	His	Met	Glu	Cys	Arg
	915						920					925			
Leu	Leu	Asp	Leu	Ala	Tyr	Thr	Leu	Gln	Val	Gly	Arg	Glu	Ala	Met	Asp
	930					935					940				
Lys	Arg	Ile	Ser	Phe	Ile	Val	Asn	Thr	Lys	Gln	Ala	Leu	Val	Glu	Lys
945					950					955					960
Leu	Asn	Ala	Phe	Leu	Glu	Lys	Glu	Lys	Thr	Ile	Thr	Asp	Cys	Tyr	His
			965						970					975	
Tyr	Leu	Phe	Asp	Ser	Asp	Lys	Pro	Ser	Thr	Glu	Ile	Phe	Arg	Leu	Asp
		980						985					990		
Glu	Asp	Asp	Lys	Val	Leu	Ile	Asn	Ser	Trp	Ile	Ser	Gln	Ser	Gln	Tyr
	995						1000						1005		

His Lys Leu Ala Glu Ala Trp Ser Gln Gly Leu Asp Ile Asp Trp Thr
 1010 1015 1020
 Leu Leu Tyr Thr His Ser Ser Thr Pro Arg Arg Ile Ser Leu Pro Thr
 1025 1030 1035 1040
 Tyr Pro Phe Ala Arg Asp Arg Tyr Trp Leu Pro Glu Lys Pro Arg Tyr
 1045 1050 1055
 Asn Ala Ala Asn His Pro Val Ser Asn His Gln Thr Thr Thr Gln Asn
 1060 1065 1070
 His Ser Arg Phe Ala Ile Asp Thr Asp His Asp Val Val Ala Glu Ile
 1075 1080 1085
 Met Gln Lys Thr His Gln Gln Glu Leu Glu Gln Trp Leu Leu Lys Leu
 1090 1095 1100
 Leu Phe Val Gln Leu Gln His Met Gly Leu Phe Gln His Arg Val Phe
 1105 1110 1115 1120
 Glu Thr Ala Thr Ala Leu Arg Gln Ser Ala Gly Ile Val Asp Lys Tyr
 1125 1130 1135
 Asp Arg Trp Trp His Glu Cys Leu Ser Val Leu Gln Asp Ala Gly Tyr
 1140 1145 1150
 Leu Glu Trp Lys Asp Asp Ser Val Ala Ala Ala Gln Ala Leu Glu Ser
 1155 1160 1165
 Glu Ser Gln Glu Ala Trp Trp Ser Arg Trp Asn Thr Glu Tyr Lys His
 1170 1175 1180
 Tyr Gln Asn Asp Pro Glu Lys Lys Thr Leu Ala Ile Leu Ile Asn Asp
 1185 1190 1195 1200
 Cys Leu Gln Ala Leu Pro Gly Val Leu Ser Gly Glu Gln Leu Ile Thr
 1205 1210 1215
 Asp Ile Ile Phe Pro Asn Gly Ser Met Glu Lys Met Glu Gly Leu Tyr
 1220 1225 1230
 Lys Asn Asn Arg Ile Ala Asp Tyr Cys Asn Gln Cys Val Gly Asp Leu
 1235 1240 1245
 Leu Val Gln Phe Ile Glu Ala Arg Leu Ser Arg Asp Ala Asn Ala Arg
 1250 1255 1260
 Ile Arg Ile Ile Glu Ile Gly Ala Gly Thr Gly Gly Thr Thr Ala Ile
 1265 1270 1275 1280
 Val Leu Pro Met Leu Gln Ala Tyr Gln Asp His Ile Asp Thr Tyr Cys
 1285 1290 1295
 Tyr Thr Asp Val Ser Lys Ala Phe Leu Met His Gly Gln Glu His Tyr
 1300 1305 1310
 Gly Glu Gln Tyr Pro Tyr Leu Ser Tyr Cys Leu Cys Asn Ile Glu Gln
 1315 1320 1325
 Asp Leu Val Ala Gln Gly Ile Ser Val Gly Asp Tyr Asp Ile Ala Ile
 1330 1335 1340
 Ala Ala Asn Val Leu His Ala Thr Arg Asn Ile His Glu Thr Val Ser
 1345 1350 1355 1360
 His Val Arg Gln Ala Leu Ala Ala Asn Gly Leu Leu Ile Leu Asn Glu
 1365 1370 1375
 Phe Ser Gln Lys Ser Val Phe Ser Ser Val Ile Phe Gly Leu Ile Asp
 1380 1385 1390
 Gly Trp Ala Leu Ser Glu Asp Thr Gly Leu Arg Ile Pro Gly Ser Pro
 1395 1400 1405
 Gly Leu Tyr Pro Lys Gln Trp Gln Ala Val Leu Glu Ala Ser Gly Phe
 1410 1415 1420
 Gly Asp Val Glu Phe Pro Leu His Asp Ala Arg Glu Leu Gly Gln Gln
 1425 1430 1435 1440
 Ile Ile Leu Ala Thr Asn Ala His Ala Asn Val Ala Ser Asp Leu Ala
 1445 1450 1455
 Thr Ser Val Ile Asp His Ala Pro Lys Arg Leu Pro Ser Ala Glu Val
 1460 1465 1470

Ser Met Asp Glu Arg Val	Ser His Asp Ala Met Met Lys Ala Ser Val
1475	1480 1485
Lys Gln Leu Leu Val Glu	Gln Leu Ser Gln Ser Leu Lys Leu Asp Met
1490	1495 1500
Asn Glu Ile His Pro Asp	Glu Ser Phe Ala Asp Tyr Gly Val Asp Ser
1505	1510 1515 1520
Ile Thr Gly Ala Ser Phe	Ile Gln Gln Leu Asn Asp Thr Leu Thr Leu
1525	1530 1535
Thr Leu Lys Thr Val Cys	Leu Phe Asp His Ser Ser Val Asn Arg Leu
1540	1545 1550
Thr Ala Tyr Leu Leu Ser	Asp Tyr Gly Asp Asp Ile Ala Gln Trp Leu
1555	1560 1565
Ala Thr Ala Pro Ala Leu	Val Asp His Pro Gln Ser Val Val Ser Gln
1570	1575 1580
Val Leu Pro Glu Arg Ser	Pro Ala Ser Thr Gln Ala Lys Pro Leu Pro
1585	1590 1595 1600
Ser Val Pro Pro Ser Leu	Ser Met Glu Ser Pro Val Gln Gln Glu Ser
1605	1610 1615
Ile Ala Ile Ile Gly Met	Ser Gly Arg Phe Ala Ala Ser Glu Asn Leu
1620	1625 1630
Glu Ala Phe Trp Gln Gln	Leu Ala Gln Gly Val Asp Leu Val Glu Pro
1635	1640 1645
Ala Ser Arg Trp Gly Pro	Gln Ala Glu Thr Tyr Tyr Gly Ser Phe Leu
1650	1655 1660
Lys Asp Met Asp Gln Phe	Asp Pro Leu Phe Phe Asn Leu Ser Gly Val
1665	1670 1675 1680
Glu Ala Ser Tyr Met Asp	Pro Gln Gln Arg Cys Phe Leu Glu Glu Ser
1685	1690 1695
Trp Asn Ala Leu Glu Asn	Ala Gly Tyr Val Gly Asp Gly Ile Glu Gly
1700	1705 1710
Lys Arg Cys Gly Ile Tyr	Ala Gly Cys Val Ser Gly Asp Tyr Ala Gln
1715	1720 1725
Leu Leu Gly Asp Gln Pro	Pro Pro Gln Ala Phe Trp Gly Asn Ala Ser
1730	1735 1740
Ser Ile Ile Pro Ala Arg	Ile Ala Tyr Tyr Leu Asn Leu Gln Gly Pro
1745	1750 1755 1760
Ala Thr Ala Val Asp Thr	Ala Cys Ser Ser Ser Leu Val Ala Val His
1765	1770 1775
Leu Ala Cys Gln Ala Leu	His Leu Asp Glu Met Glu Met Ala Leu Ala
1780	1785 1790
Gly Gly Val Ser Leu Tyr	Pro Thr Pro Ile Ile Val Glx Val Phe Ala
1795	1800 1805
Trp Cys Arg Tyr	
1810	
